

ABSTRACT OF THE DISCLOSURE

A centrifugal separator 110 (Fig 1) for removing contaminants from a pumped liquid such as engine lubricant, having a separation rotor 130 rotatable about axis 124 at high speed by a jet 178 of the liquid impinging upon impulse turbine blades 174. The rotor includes a separation and containment vessel 132 having impervious side wall 134 spaced from the rotation axis and at least one end wall 138 open at 142 permit liquid to leave the vessel as fast as it can enter, so that a zone 140 is defined adjacent side wall 134 that holds a volume of liquid much less than the whole volume encompassed by the vessel walls and filled in conventional high speed separators. Lower inertia and reduced pressure gradients in the liquid permit it to be spaced further from the axis than is conventional, with improved separation efficiency. Liquid may be supplied to zone 140 in any convenient manner but as shown spent turbine liquid 178' is collected on a rotating surface 158 of a divider wall 152 that spreads and/or directs the liquid to transfer passages 164 from which it is flung centrifugally to the separation zone 140. The outer side wall 134 of the vessel which collects contaminants may be a replaceable attachment to the divider wall/turbine part. The rotor may alternatively comprise such a vessel surrounding a conventional, filled canister to effect a radial increase in such rotor without comparable increase in the volume of liquid contained.